R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

RE: INTERVIEW

The Examiner is thanked for conducting an interview with the undersigned on April 22, 2008.

The application has been amended as discussed with the Examiner to more clearly distinguish over the cited references.

THE CLAIMS

Claims 9 and 18 have been amended to recite that the sample information comprises at least one of information about the focusing position of the reference part and information about a light amount according to light reflected from the reference part, along the lines formerly recited in (now canceled) claim 7. As recited in claims 9 and 18, this sample information is used to determine a second focusing control parameter, which in turn is used to perform automatic focusing on the part to be inspected.

In addition, claim 9 has been amended to clarify that the focusing control is performed automatically by a focusing unit, as already clearly recited in claim 18.

No new matter has been added, and it is respectfully requested that the amendments be approved and entered.

THE PRIOR ART REJECTION

Claims 2-4, 7, 9-12 and 18-26 were rejected under 35 USC 103 as being obvious in view of the previously cited combination of USP 4,496,971 ("West et al") and USP 5,761,336 ("Xu et al"). This rejection, however, is respectfully traversed with respect to the claims as amended hereinabove.

According to the present invention as recited in amended independent claims 9 and 18, a defect inspection method and apparatus are provided wherein automatic focusing control is performed with a focusing unit on a reference part determined to be normal beforehand according to a first focusing control parameter, and a second focusing control parameter is determined based on sample information obtained when performing focusing control on the reference part, wherein the sample information comprises at least one of information about the focusing position of the reference part and information about a light amount according to light reflected from the reference part. As recited in claims 9 and 18, the second focusing control parameter (which has been determined based on the sample information) is then used to perform automatic focusing control on the part to be inspected. And as recited in claims 9 and 18, a pattern image of the part to be inspected is compared with a pattern image of the reference part to detect the presence or absence of an abnormal condition.

With this structure, the claimed present invention is capable of performing focusing control to detect defects in semiconductor chips by applying to the part to be inspected a (second) focusing control parameter determined based on sample information obtained when performing focusing control on a reference chip.

It is again respectfully submitted that the prior art references cited by the Examiner do not disclose, teach or suggest the above described features and advantageous effects of the defect inspection apparatus and method of the present invention as recited in the amended claims.

West et al relates to an apparatus for detecting defects in a circuit board using pattern matching and a method relating to the pattern matching. In West et al, a parameter for analyzing images of the circuit board is optimized by detecting features of the image. However, in contrast to the present invention, and as recognized by the Examiner, West et al does not teach setting a focus control parameter used for automatic focus control.

As explained in the Amendment filed on October 11, 2007, and as discussed in detail during the telephone interview conducted on April 22, 2008, Xu et al describes detecting defects in a sample using a microscope in which aperture stop (AS) is controlled to optimize lighting conditions by comparing known defect information with correction sample images. A first image

of the correction sample is obtained using the diameter of a first AS and a second image of the correction sample is obtained using the diameter of a second AS. Then, the first and second images are analyzed to determine which image is more similar to the defect information known beforehand and thus obtain the better AS diameter. As such, multiple images of the correction sample are obtained at different lighting conditions (AS) to determine which should operatively be used.

In contrast to the claimed present invention, however, the AS parameter in Xu et al is not determined based on sample information obtained when performing focusing control on a reference part, as recited in amended claims 9 and 18. And it is respectfully submitted that Xu et al clearly does not at all disclose, teach or even remotely suggest that the sample information comprises at least one of information about the focusing position of the reference part and information about a light amount according to light reflected from the reference part, as recited in amended claims 9 and 18.

At page 3 of the Final Office Action, the Examiner refers to column 3, lines 1-45 of Xu et al as disclosing how information may be obtained from calibration samples in order to obtain parameters for comparison during inspection for defects. It is respectfully pointed out, however, that this portion of Xu et al merely discloses varying the aperture stop (AS) lighting

conditions to obtain first and second images which are analyzed to determine which image is more similar to defect information known beforehand and thus obtain the better AS diameter for performing defect inspection. However, it is again respectfully pointed out that the AS parameter in Xu et al is not determined based on sample information obtained when performing focusing control on a reference part, and it is again respectfully submitted that Xu et al clearly does not at all disclose, teach or even remotely suggest that the sample information comprises at least one of information about the focusing position of the reference part and information about a light amount according to light reflected from the reference part, as recited in amended claims 9 and 18.

Accordingly, it is respectfully submitted that even if the teachings of West et al and Xu et al were combinable in the manner suggested by the Examiner, such combination would still not disclose, teach or suggest the defect detection method and apparatus of the present invention as recited in amended independent claims 9 and 18.

Still further, it is again respectfully submitted that it would not have been obvious to one of ordinary skill in the art to combine the teachings of Xu et al and West et al because Xu et al relates to selecting an optimized lighting condition to detect defects and does not address the issue of differences in focusing

position (i.e., the position between an objective lens and parts being observed) which are generated when conducting a defect inspection based on comparison of pattern images of the reference part and parts to be inspected. Since differences in focusing position are not considered by, or even relevant to Xu et al, it is respectfully submitted that one of ordinary skill in the art would not consider applying any of its purported teachings in combination with West et al which involves analysis of pattern images with the attendant problem of defects arising as a result of focusing position differences.

In view of the foregoing, it is respectfully submitted that the present invention as recited in amended independent claims 9 and 18, and claims 2-4, 10-12 and 19-26 respectively depending therefrom, clearly patentably distinguishes over West et al and Xu et al, taken singly or in combination, under 35 USC 103.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned for prompt action.

Respectfully submitted,

/Douglas Holtz/

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